

## **PIs, Supervisors and Work Team Leads**

1. Describe your role relative to safety on the job?

Sample answer: Safety is an integral part of everybody's job. My role is to assure that all work is performed in a safe manner and in accordance with ISM, and to provide all necessary resources to my employees.

2. Tell me about the tasks, activities or experiments being conducted in this laboratory or by this group.

Sample answer: We conduct organic and polymer synthesis and characterization. This means we carry out potentially hazardous procedures with materials that can be dangerous if mishandled.

3. Describe the hazards associated with each task, activity or experiment, the hazards analysis that you conducted, and who else was involved in the hazards analysis (e.g., Subject Matter Experts/Safety Liaisons).

Sample answer: The hazards are associated with performing organic chemistry operations; that is handling large amounts of flammable solvents, potentially toxic and corrosive materials. Some glove-box operations, vacuum and low temperature procedures are also potentially hazardous. JHA profiles and Activity Hazard Documents are generated for all hazardous processes and procedures. These are generated in co-operation with Division Safety Coordinator and EH&S Division Liaison.

4. Tell me about the hazard controls that are in place, and how the controls mitigate or eliminate each of the hazards.

Sample answer: Personal protective equipment is required and made available. Regular review of procedures, housekeeping and equipment are carried out. Proper ventilation and containment facilities are provided and used. Each employee's individual JHA details controls to mitigate the normal low-level hazards the employee is exposed to. Work activities that pose increased hazards have tasks, hazards and controls detailed in Activity Hazard Documents.

5. Describe how information regarding hazards and controls is communicated to personnel. Describe what training has been provided to the staff for any of these controls.

Sample answer: Group meetings take place every week and are usually preceded by a safety walk-through of the labs followed by a safety discussion. The JHA and formal authorizations such as Activity Hazard Documents are read, understood, and signed-off by each user. Each of these authorization documents detail required training and completion status.

6. Describe how you satisfy yourself that your staff understand the hazards and use the prescribed controls.

Sample answer: I walkthrough the labs frequently, observe work activities, talk about safety with my employees.

7. Tell me what you do to authorize the start of a task, activity or experiment?

Sample answer: I lead the ISM process related to this new task and engage all employees in the procedure. I authorize the work when all potential hazards have been identified and related controls established. All related authorization documentation e.g., JHAs and AHDs must be updated and then read and understood by all employees.

8. Tell me how frequently you are in the laboratory or work area, and how/if you observe staff performing their work.

Sample answer: Every day that I am in the Lab. I observe my staff while I am in the lab. I am there frequently enough that they do not perceive it to be unusual.

9. Tell me how you assure that any changes in the scope of or hazards associated with tasks, activities or experiments are identified and examined to determine if changes in controls are needed?

Sample answer: Generally through the frequent lab walk-throughs and continuous safety dialog with my employees I identify changes that may be occurring. This involves all members of staff and is generally detected in deterioration of housekeeping or some other symptoms. Breaking of equipment also is a useful clue that something is not safe and needs to be modified. Near-misses and hits is another example of early warning. If necessary, written procedures are posted on the equipment (e.g., glove-boxes). Staff is familiar with the applicable authorizations for the work they are doing (e.g. JHAs and AHDs), and it is explicit policy that these authorizations must be updated whenever the work or hazards change significantly.

10. Tell me who is responsible for the safety of the work?

Sample answer: I am responsible for my safety. Besides that, all line management is involved and co-responsible.

11. Describe how you assure that personnel or groups working on the tasks, activities or experiments in this laboratory or work area are aware of hazards and controls

Sample answer: Everybody must be authorized to do the work. Personnel must complete JHA and take all required training. On-site job training must be performed routinely. Two-way communication of safety related issues between the PI and employees is established. All personnel are instructed to be aware of what their colleagues are doing. They are all empowered to intervene in someone else's experiment if it seems unsafe and they are instructed to question their neighbours' actions.

12. What action would you take if you see an unsafe condition or unsafe behavior on the part of someone under your supervision in the workplace?

Sample answer: Stop the work immediately. Recognize the problem, discuss it with the employee and develop appropriate corrective actions. Input the case and the proposed corrective actions into Corrective Action Tracking System (CATS). If the problem is recurring the person is suspended from working in the lab until they have carried out a hazard analysis and agree to correct the condition or behavior. In extreme cases, terminate someone's access to the laboratory.

## **All Personnel**

1. Tell me about the nature of your work and the hazards that exist.

See sample answers on pages 1 & 2 above

2. Describe the hazards analysis that you conducted and who else was involved in the hazards analysis

Sample answer: “In close collaboration with my supervisor, I determined that the work involves the use of a laser. We estimated that the power of the laser beam is high enough to be dangerous for human eye but still too low to ignite a chemical reaction in the lab environment” The individual JHA analyzes the normal hazards one is exposed to and is completed by the employee and their supervisor. Medium and higher hazard activities, such as involving the lasers, are analyzed in the Activity Hazard Document. EH&S Subject Matter Experts, the Division Safety Coordinator, and the PI are involved with this analysis.

3. Tell me about the hazard controls that are in place, and how the controls mitigate or eliminate each of the hazards.

Sample answer: “High-power laser light beam – JHA, Work Authorization(s) completed and up-to-date, all necessary training completed, personal protective equipment available (eyeware, labcoat), the beam is controlled and contained within the working area, door interlock system installed and properly maintained”

4. Tell me what sort of training or qualification might be needed for any of the controls.

Sample answer: Laser eye examination, Laser Safety Class

5. What do you do in case of emergency?

I call x7911 in life threatening situations. For non-life threatening events I call x6999. I notify my supervisor and EH&S personnel ASAP. For detailed instructions about handling emergency situations (e.g., fire, spills, injury, accident reporting) I always refer to a red flip chart that is on display in every lab.

## **Laboratory Personnel**

1. Tell me about any procedures you use to conduct your experimental activity.

Sample answer: Protocol for transferring materials in and out of gloveboxes

2. Tell me how long you have been performing this activity, and describe any recent changes in the experiment you are conducting.

Sample answer: Recently I requested that all substances be handled in a secondary containers during transfer to prevent spills

3. Describe how you have checked or updated the hazard analysis to be sure it still covers all hazards in light of these changes.

Sample answer: I make sure that all these changes and requirements are included in your JHA profile and AHD, if necessary.

4. Tell me who is in charge of this research activity and of the safety of it; how many other personnel or groups are involved.

Always refer to your supervisor and/or Work Lead. EH&S Subject Matter Experts and the Division Safety Coordinator are available for consultation and reviews.

5. What should you do when you identify a change in the scope of your activities or an additional hazard is identified?

Sample answer: Stop the work and notify/consult your supervisor or Work Lead. Analyze all potential hazards and develop controls to mitigate them. Update authorizations as necessary, such as the JHA or AHDs.

6. Describe how you are sure that all the personnel or groups are aware of the hazards, understand the controls, and perform their work safely.

Sample answer: Two-way communication of safety related issues between the PI and employees is established. All personnel are instructed to be aware of what their colleagues are doing. They are all empowered to intervene in someone else's experiment if it seems unsafe and they are instructed to question their neighbor's actions. Talk about safety at group meetings.